

IN THE CLAIMS

1. (Currently Amended) A process for the catalytic oxidation of a hydrocarbonaceous fuel into a conversion product under conditions of non-steady demand of conversion product, wherein a feed mixture comprising the fuel and an oxygen-containing gas is contacted with a catalyst bed, the process comprising:
 - (a) setting the flow rate of the fuel and the flow rate of the oxygen-containing gas in accordance with the demand of conversion product and a pre-determined value of the oxygen/carbon ratio in the feed mixture;
 - (b) determining the actual temperature of the upstream surface of the catalyst bed by measuring the ratio between the light intensities emitted by the upstream surface of the catalyst bed at different wavelength ranges by means of a quick response device within a time frame of from between 1 to between 100 milliseconds comprising an optical pyrometer;
 - (c) generating an output signal that is a function of the difference between the actual temperature and a set point for the temperature; and,
 - (d) using the output signal to adjust the flow rate of the fuel.
2. Cancelled.
3. (Previously Amended) The process of claim 2, wherein the turn-down ratio in demand of conversion product is in the range of from between 1:10 to between 1:100.
4. (Currently Amended) The process of claim 1, wherein the set point for the temperature is determined by the value of the oxygen/carbon ratio in the feed mixture and by the demand of conversion product.
5. (Previously Amended) The process of claim 1, wherein the catalytic oxidation process is a catalytic partial oxidation process and wherein the conversion product is a hydrogen-containing gas.
6. Cancelled.
7. Cancelled.

8. (Currently Amended) The process of claim 1 6, wherein the light intensity is measured at wavelengths in the range of from between 700 to between 1000 nm.

9. (Previously Amended) The process of claim 1, wherein the adjustment of the flow rate in step (d) is carried out by means of a rapid response actuator.

10. (Previously Amended) The process of claim 9, wherein the adjustment of the flow rate of the fuel is carried out by means of a pulsed liquid injection system.

11. Cancelled.

12. (New) A transport means comprising a system for the catalytic partial oxidation of a fuel, which system comprises:

 a catalyst bed having an upstream surface and a downstream surface;
 a first line controlled by a first adjusting means; and, a second line controlled by a second adjusting means, wherein a hydrocarbonaceous fuel passes through the first line and an oxygen-containing gas passes through the second line and such gases are mixed before contacting the catalyst bed;

 an optical pyrometer connected to a control unit which is connected to the first adjusting means and/or the second adjusting means, wherein the optical pyrometer measures the actual temperature of the upstream catalyst surface to produce a signal and such signal is fed into a control unit to produce an output signal which is fed into the first adjusting means and/or the second adjusting means in order to control such adjusting means,

 wherein such system is operating under a non-steady state demand of conversion product.